

residence in the Academy of Sciences, being vociferously cheered on the way by the dense crowds assembled to witness his return. Prof. Nordenskjold has been created a Baron, and Lieut. Palander and Mr. Oscar Dickson (who so largely contributed to the expense of the expedition) have received patents of nobility. The latter has, in addition, received the Grand Cross of the Order of the North Star. M. Sibiriakoff, another liberal supporter of the expedition, has been appointed Commander of the same Order.

THE long-expected map of Palestine, drawn in twenty-six sheets, on a scale of 1 inch to the mile, after the surveys of Lieutenants Conder and Kitchener, R.E., is now reported as complete and ready for publication. It has been photoincographed, under the superintendence of Col. Cooke, R.E., the Director-General of the Ordnance Survey, for the committee of the Palestine Exploration Fund. The first issue will be to the 250 holders of the special edition of the memoirs and map, as a first instalment of that work. It will afterwards be forwarded to the general subscribers of this fund, and will then be issued to the public. The survey of the country was accomplished between January, 1872, and September, 1877, since which time the maps have been laid down, the memoirs written, the observations calculated, the hills drawn, and the sheets lithographed. The whole of the work, except the colouring, has been executed by officers and men of the Royal Engineers. The general editors of the maps and memoirs are Major Anderson, C.M.G., R.E., and Prof. E. H. Palmer, of Cambridge.

MR. WHYMPER has succeeded in carrying out part of his South American programme by ascending to the summit of Mount Chimborazo. Dr. Nachtigal, in reference to this, states at a recent meeting of the Berlin Geographical Society, that a Frenchman, Jules Remy, professed to have accomplished the feat in 1856, but it is very doubtful if he actually did. He gave the height as 7,328 metres, whereas it is 1,000 m. less. Humboldt observed the height trigonometrically to be 6,530 m., and Reiss, as the result of three measurements, found the highest of the two peaks to be 6,310 m., and the other 6,269 m. Humboldt in 1802 attempted the ascent, but only reached a height of 5,878 m., while Boussingault with Hall, in 1831, reached a height of 6,004 m.; these attempted it from the south side, while Dr. Stubel, from the north side, reached a height of 5,810 m. After an inspection of ten days Mr. Whymper made three attempts, and on the third succeeded in mounting both peaks. The night before the final ascent he spent at a height of 5,227 m.

THE *Voix* has received a letter from the Russian Consul at Sydney, M. S. Paul, dated February 4 (16), in which he states that he had received a letter from Dr. Michucho-Maclay, of date November 28 (December 10). The explorer was then at Simbonn, one of the Solomon Islands, and proposed to visit the Louisiade and Solomon Archipelagos, which would occupy him about six months, when he would return to Sydney.

THE Russian Geographical Society will receive from the Government a subsidy of 14,000 roubles yearly, to found and maintain meteorological stations at the mouth of the Lena and on the islands of New Siberia.

L'Exploration states that early in March Mount Argacus (Ardjeh Dagh), in the Anti-Taurus chain, Asia Minor, 12 kilometres from the town of Kaisarieh, broke out in eruption. Its height is estimated at 3,391 metres above the sea. M. A. Synnet, of the Imperial Lycee of Galata-Serai, writing to the *Stamboul* on the eruption, states that Mount Argacus had its origin in volcanic eruptions which have taken place from the lower tertiary to the fourth century A.D. The surface occupied by the lava is greater than that of the Island of Corsica. The mountain is composed exclusively of dolerite, trachyte, and basalt. Claudius and Strabo speak of the mountain as then active.

WE hear from Washington that the Government printer has been authorised by Congress to put to press a second edition of the "Narrative of the North Polar Expedition of the U.S. Ship *Polaris*" (noticed in NATURE, vol. xvi. p. 225), under the command of Capt. C. F. Hall, as soon as orders for a thousand copies have been received.

THE new *Bulletin* of the Belgian Geographical Society contains M. Cambier's report to the International African Association on his journey from Tabora to Karama on Lake Tanganyika, accompanied by a sketch map of his route. There is also a report of the recent annual meeting of the Association.

THE chief paper in the last part of the *Transactions* of the Asiatic Society of Japan is one by Mr. R. W. Atkinson descriptive of a journey through the provinces of Shinshu, Hida, and Etchū, during which he visited the mountains known as Yatsugatake, Haku-san, and Tate-Yama. There is also a proposal by Mr. W. G. Aston for the arrangement of the Corean alphabet.

PHYSICAL NOTES

PROF. MARANGONI has lately experimented (*Riv. Sci. Ind.*, March 15) on the diathermanous power of films of soapy water. A series of equidistant films (eight to ten) were produced in a wide vertical glass tube, and horizontal heat-rays from a smoked plate having a temperature of about 400° were directed down the tube by means of a metallic mirror, a second mirror below directing them to a thermopile communicating with a Weber magnetometer. The conclusions arrived at from the tabulated numbers are these: 1. The first of the films, notwithstanding its great tenuity, absorbs more than half the incident heat, reducing it (as expressed in the magnetometer deflections) from 38 to 18. 2. The successive films produce decrements, as theory indicates; the differences of their logarithms are sensibly constant (on an average 7.5), and the logarithms themselves, after the second film, decrease proportionally to the number of the films. 3. The diminution of intensity observed must depend very little on reflection, but be due almost wholly to absorption. Indeed the first two films act like a sieve, intercepting, probably, the less refrangible rays in very large proportion, such as would hardly have been expected. 4. A given film becomes more diathermanous the thinner it becomes. 5. When various salts are mixed with the soap solution the diathermanous power is not sensibly affected. All these conclusions are in full agreement with the results of Melloni and with the theory of the phenomenon.

IN a recent paper to the Vienna Academy on the photo-chemistry of silver bromide, Dr. Eder gives the result of a large number of experiments relating to latent actions of light connected with the chemical development. It is first proved that silver bromide behaves differently, as it is brought to an emulsion in an indifferent material (e.g., collodion) or an easily oxidisable organic substance (e.g., gelatine); also the influence of this circumstance and of the presence of variable quantities of silver nitrate or of soluble bromide on the sensitiveness to light is carefully studied, special regard being had to the passage of silver bromide into its different modifications and the consequent different photo-chemical behaviour. Oxidising acids are especially prejudicial to the light-sensitiveness, other acids less so, and still less alkaline chlorides and bromides. Alkalies increase the light-sensitiveness considerably. For a highly sensitive silver-bromide preparation the addition of ammonia to the finely-divided granular bromide of silver modification, in the form of a gelatine emulsion, is recommended. Temperature and moisture have no marked influence on the sensitiveness to light, but the quality of the developer has. The view is expressed that in chemical development of the latent image, electro-chemical processes must have a part. Mechanical pressure (which especially modifies the behaviour of silver iodide to physical developers), is without action on the behaviour of silver bromide to chemical developers. Dr. Eder cites some other decompositions of silver bromide, which resemble the "latent action" of light, and may be induced by prolonged treatment with weak means of reduction. Lastly, it is pointed out that silver bromide with chemical development is greatly superior to silver iodide, which with physical development exceeds all other silver haloid salts in sensitiveness, and herein it is nearly equalled by silver chloride.

FROM recent experiments by a new method on heat-conduction in liquids (a subject on which very conflicting results have been recorded), Herr F. H. Weber concludes that the heat-conducting power stands (without exception) in closest connection with the specific heat of unit volume. Comparing the conduction of heat in a metallic liquid (mercury) with that in transparent non-metallic liquids, he considers it depends on essentially different "moments" in the two cases. In the non-metallic liquids it seems to consist in a simple transference of the kinetic energy of the moved ponderable molecules from layer to layer, whereas in metallic liquids it would appear that the *internal* radiation from layer to layer is the essential element, the other being here of only secondary importance. This, in Herr Weber's opinion, throws quite a new light on the analogy between the heat

conductivity and the electric conductivity of metals. These researches are described to the *Vierteljahrsschrift* of the Zurich *Naturforschende Gesellschaft*, 1879, Bd. xxiv. p. 252.

THE INDIA MUSEUM ZOOLOGICAL COLLECTIONS

THE following letter on this subject has been sent us for publication:—

British Museum, March 17, 1880

MY LORD,—I am directed by the Trustees of the British Museum to acquaint your Lordship that Dr. Günther, the Keeper of the Department of Zoology in this Museum, has reported to them that he has completed the work of selecting from the zoological collections of the India Museum the specimens required for the British Museum, and of distributing the remainder among other institutions.

The accompanying extract from Dr. Günther's report shows in detail what has been done with those specimens which formed part of the India Museum, and what is proposed with reference to certain other specimens not included in the general transfer to the Trustees. I have, &c.,

(Signed) EDW. A. BOND

The Right Honourable the Secretary of State for India, &c., &c.

ZOOLOGICAL COLLECTIONS FROM THE INDIA MUSEUM

Extract from Report to the Trustees of the British Museum, by Dr. Günther, Keeper of the Department of Zoology. Dated March 8, 1880

1. For the British Museum have been selected and retained:—

- 672 Mammalia (mounted, or in skins, skeletons or skulls).
- 6,409 Birds.
- 125 Fishes.
- 28 Tortoises.
- 217 Mollusca.
- 83 Crustacea.
- 1,813 Insecta.
- 52 Radiata.
- 60 Jars and preparation of Economic Animal Products (besides some objects of manufacture transferred to the Ethnographical Department).

The Documents relating to the Zoological collections:—

2. A selection of the remainder was offered in succession to the Indian Museum, Calcutta; the Indian Institute, Oxford; the South Kensington Museum; the Dublin Museum; the Museum of Scarborough; and the Museum of Maidstone; the three first having been specially mentioned by the India Office as deserving precedence of other institutions.

a. The Agent of the Calcutta Museum selected:—

- 53 Mammalia and 3 Skulls of Mammals.
- A series of named shells.
- 3,140 Named Insects.
- A box of miscellaneous Insects. (The number of bird skins to be sent is not yet determined.)

b. Prof. Monier Williams, on behalf of the Indian Institute, Oxford, took the bulk of the remaining specimens, entering at the same time into an engagement to return them to the Trustees in case the project of the Institute were not carried out; he received:—

- 118 Mammalia.
- 37 Skulls and heads of Mammalia.
- 49 Horns of Mammalia.
- 2 Boxes containing various bones.
- 1 Narwhal's tusk.
- 1 Picture of a Flying Fox.
- 426 Stuffed Birds.
- 3 Boxes of Bird-skins.
- 5 Birds'-nests.
- 125 Bottles containing Reptiles and Fishes.
- 44 Stuffed Reptiles.
- 2 Models of Snakes.
- 1 Case of Stuffed Snakes.
- 94 Stuffed Fishes.
- 4 Models of Fishes.
- 1 Cabinet with Mollusks.
- 1 Box with Shells and Corals.
- 2 Boxes with Pearl Oysters, &c.

- 2 Boxes with Gorgonia.
- 2 Cases with Crustaceans.
- 5 Cabinets with named Insects.
- 10 Old Store boxes with various Insects.
- 2 Echinoderms.
- 1 Neptune's Cu.
- 1 Cabinet with Miscellaneous Specimens; Eggs, Nest, Crustaceans, Shells, &c.
- 1 Box of Sterns of Hodgson's Birds.

c. The South Kensington Museum took the whole of the collection of Economic Animal Products left after the selections for the British Museum and Kew had been made; the latter establishment receiving, by a special arrangement with the India Office, all products of silk and lac.

d. The Agent of the Science and Art Museum, Dublin, selected:—

- 7 Stuffed Mammals.
- 8 Skulls of Mammals.
- 1 Horn of *Cervus duvancii*.
- 5 Tortoises.
- 4 Bottles containing Reptiles.

e. The Agent of the Philosophical Society of Scarborough selected:—

- 10 Mammalia.

f. The Agent of the Museum of Maidstone took the whole of the remaining specimens, viz.:—

- 103 Stuffed Mammals.
- 10 Skulls.

Before commencing the work of distribution Dr. Günther received intimation from Dr. Birdwood that certain specimens were not included in the general transfer to the Trustees, viz.:—

1. Four small cases of stuffed Birds from Kashgar and an Ibex, belonging to Dr. Bellew, and lent by him to the Indian Museum for exhibition. These specimens would be a valuable acquisition to the British Museum, and therefore Dr. Günther has written to Dr. Bellew, who is at present in Afghanistan, that he would propose to the Trustees to continue the custody of them until instructions shall have been received from him as to their disposal.

2. A case of Wild Dogs, lent for exhibition by Mr. T. Webber, whose address is unknown at present. Dr. Günther would propose to undertake the temporary custody of this case until it is claimed by the owner.

METEOR SHOWERS¹

SEVERAL of the meteor streams observed at Bristol within the last two years appear to be of such marked intensity as to merit special description, and the following notes in connection with five of these may possess some interest to observers.

No.	Epoch.	Radiant.		Date of Maximum.
		α	δ	
I.	July 30-Aug. 1	32° + 53°	0° 0°	July 31, 1878.
II.	July 27-30	34° - 13°	0°	July 27, 28, 1878-9.
III.	August 21-25	29° + 60°	0°	August 21-23, 1879.
IV.	October 14-20	31° + 9°	0°	October 15, 1879.
V.	August 8-11	44° + 25°	0°	August 8-11.

I. At the middle of July, 1877, a few meteors were traced from a radiant point at $36° + 47°$, and on projecting a large number of meteor tracks registered in foreign catalogues for the period July 25-31, I found the same shower amply manifested from 25 paths, though the radiant was $5°$ higher in declination. A succession of clear nights occurred from July 26 to August 2 in 1878, and I obtained some lengthy observations. In about twenty-two hours of watching more than 400 shooting stars were seen in the eastern sky, chiefly amongst the constellations of Perseus, Cassiopeia, and Andromeda. I saw many swift meteors leaving short streaks and otherwise exhibiting much uniformity in their appearances and directions. The radiant point was not reconcilable with that of the well-known annual shower of Perseids. It was sharply defined about $3°$ S. of the group χ Persei, and the maximum of the shower was witnessed on July 31, when 21 meteors were noted diverging from the point described. In all I saw 63 meteors conforming to this stream; they were short and quick, always with streaks of $3°$ or $4°$ in the latter portion of their flights. I looked for the shower again in 1879, and

¹ Extract from a paper in the *Monthly Notices* of the Royal Astronomical Society, vol. xl, No. 3 (January, 1880).